

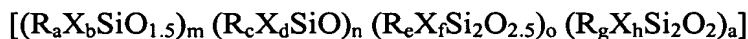
IN THE CLAIMS

Please amend the claims as follows:

Claims 1-29 (Canceled).

Claim 30 (New): A matrix comprising a nanofiller,

which comprises a nanofiller bonded covalently by a chemical reaction to an organic and/or inorganic matrix material, the nanofiller having a size of less than 20 nm and comprising functionalized polyhedral oligomeric silicon-oxygen cluster units of the formula



with:

a, b, c=0-1; d=1-2; e, g, f=0-3; h=1-4;

$m \cdot b + n \cdot d + o \cdot f + p \cdot h \leq 4$; $m+n+o+p \geq 4$; $a+b = 1$; $c+d = 2$; $e+f = 3$ and $g+h = 4$;

R = hydrogen atom, alkyl, cycloalkyl, alkenyl, cycloalkenyl, alkynyl, cycloalkynyl, aryl, heteroaryl group or polymer unit, which are in each case substituted or unsubstituted, or further functionalized polyhedral oligomeric silicon-oxygen cluster units, which are attached by way of a polymer unit or a bridging unit,

X = oxy, hydroxyl, alkoxy, carboxyl, silyl, alkylsilyl, alkoxysilyl, siloxy, alkylsiloxy, alkoxysiloxy, silylalkyl, alkoxysilylalkyl, alkylsilylalkyl, halogen, epoxy, ester, fluoroalkyl, isocyanate, blocked isocyanate, acrylate, methacrylate, nitrile, amino, phosphine group or substituents of the type R comprising at least one such group of the type X,

the substituents of the type R being identical or different and there being one substituent of the type X per cluster unit which is reacted with the matrix material, and thereafter the nanofiller is covalently bonded to the matrix material.

Claim 31 (New): The matrix as claimed in claim 30,

which comprises as inorganic matrix material, mineral building materials and/or inorganic sinter compositions.

Claim 32 (New): The matrix as claimed in claim 30,
which comprises as organic matrix material an elastomer or a thermoplastic or thermoset.

Claim 33 (New): The matrix as claimed in claim 30, wherein
the organic matrix material is a plastic or polymer selected from the group consisting of polyethylene, poly-propylene, polyester, copolyester, polycarbonate, polyamide, copolyamide, polyurethane, polyacrylate, polymethacrylate, polymethacrylate copolymer, polysiloxane, polysilane, polytetrafluoroethylene, phenolic resin, polyoxymethylene, epoxy resin, polyvinyl chloride, vinyl chloride copolymer, polystyrene, styrene copolymers, ABS polymer, alkyd resin, unsaturated polyester resin, nitrocellulose resin, rubber and mixtures thereof.

Claim 34 (New): The matrix as claimed in claim 30,
wherein
the matrix comprises from 0.05 to 90% by weight of the nanofiller.

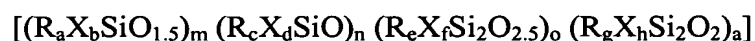
Claim 35 (New): A process for preparing a matrix as claimed in claim 30,
which comprises mixing the nanofiller into a matrix material which is in liquid form and forming by chemical reaction at least one covalent bond between nanofiller and matrix material.

Claim 36 (New): The process as claimed in claim 35,
wherein
the nanofiller is mixed mechanically en masse into a polymer melt.

Claim 37 (New): The process as claimed in claim 35,
wherein
before being mixed into the matrix material the nanofiller is dissolved in a solvent.

Claim 38 (New): A method for producing plastics, sealing compounds, paints,
printing inks, adhesives, ceramics, mineral building materials, concrete, mortar, plaster, or
coatings of ceramics and plastics, said method comprising:

producing said plastics, sealing compounds, paints, printing inks, adhesives, ceramics,
mineral building materials, concrete, mortar, plaster, or coatings of ceramics and plastics
which comprises a nanofiller bonded covalently by a chemical reaction to an organic and/or
inorganic matrix material, the nanofiller having a size of less than 20 nm and comprising
functionalized polyhedral oligomeric silicon-oxygen cluster units of the formula



with:

a, b, c=0-1; d=1-2; e, g, f=0-3; h=1-4;

$m \cdot b + n \cdot d + o \cdot f + p \cdot h \leq 4$; $m+n+o+p \geq 4$; $a+b = 1$; $c+d = 2$; $e+f = 3$ and $g+h = 4$;

R = hydrogen atom, alkyl, cycloalkyl, alkenyl, cycloalkenyl, alkynyl, cycloalkynyl,
aryl, heteroaryl group or polymer unit, which are in each case substituted or unsubstituted, or
further functionalized polyhedral oligomeric silicon-oxygen cluster units, which are attached
by way of a polymer unit or a bridging unit,

X = oxy, hydroxyl, alkoxy, carboxyl, silyl, alkylsilyl, alkoxysilyl, siloxy, alkylsiloxo, alkoxysiloxo, silylalkyl, alkoxysilylalkyl, alkylsilylalkyl, halogen, epoxy, ester, fluoroalkyl, isocyanate, blocked isocyanate, acrylate, methacrylate, nitrile, amino, phosphine group or substituents of the type R comprising at least one such group of the type X, the substituents of the type R being identical or different and there being one substituent of the type X per cluster unit which is reacted with the matrix material, and thereafter the nanofiller is covalently bonded to the matrix material.